



NK1.1 Monoclonal Antibody (PK136), PE, eBioscience™

Catalog Number 12-5941-82 Product data sheet

Details	
Size	100 μg
Host/Isotope	Mouse / IgG2a, kappa
Class	Monoclonal
Туре	Antibody
Clone	PK136
Conjugate	PE
Form	Liquid
Concentration	0.2 mg/mL
Purification	Affinity chromatography
Storage buffer	PBS, pH 7.2
Contains	0.09% sodium azide
Storage Conditions	4° C, store in dark, DO NOT FREEZE!

Species Resetivity	
Species Reactivity	
Species reactivity	Mouse
Published species	Mouse, Human, Not Applicable
Tested Applications	Dilution *
Flow Cytometry (Flow)	0.25 µg/test
Published Applications	
Flow Cytometry (Flow)	See 100 publications below
Miscellaneous PubMed (Misc)	See 1 publications below
* Suggested working dilutions are given as a guide only. It is recomm	nended that the user titrate the product for use in their own

experiment using appropriate negative and positive controls.

Product specific information

Description: The PK136 monoclonal antibody reacts with mouse NK1.1, an antigen expressed by natural killer cells and a subset of T cells in the NK1.1 mouse strains including C57BL and NZB. Several commonly used laboratory mouse strains such as BALB/c, SJL, AKR, CBA, C3H and A do not express the NK1.1 antigen. For detection of NK cells in these strains the monoclonal antibody DX5 (Cat. No. 14-5971) should be used. Simultaneous staining of C57BL/6 spleen cells with PK136 and DX5 reveals coexpression of both markers by a majority of cells as well as presence of small populations of DX5+PK136- and DX5-PK136+ cells. Applications Reported: PK136 has been reported for use in flow cytometric analysis. Applications Tested: The PK136 antibody has been tested by flow cytometric analysis of C57Bl/6 mouse splenocytes and can be used at less than or equal to 0.25 µg per test. A test is defined as the amount (µg) of antibody that will stain a cell sample in a final volume of 100 µL. Cell number should be determined empirically but can range from 10^5 to 10^8 cells/test. It is recommended that the antibody be carefully titrated for optimal performance in the assay of interest. Excitation: 488-561 nm; Emission: 578 nm; Laser: Blue Laser, Green Laser, Yellow-Green Laser. Filtration: 0.2 µm post-manufacturing filtered.

Background/Target Information

NK1.1 (Killer cell lectin-like receptor subfamily B, member 1, KLRB1, NKR-P1A, CD161, cluster of differentiation 161), refers to Natural Killer (NK) cells, lymphocytes that mediate cytotoxicity and secrete cytokines after immune stimulation. Several genes of the C-type lectin superfamily, including the rodent NKRP1 family of glycoproteins, are expressed by NK cells and may be involved in the regulation of NK cell function. The KLRB1 protein contains an extracellular domain with several motifs characteristic of C-type lectins, a transmembrane domain, and a cytoplasmic domain. The KLRB1 protein, NKR-P1A or CD161, is classified as a type II membrane protein because it has an external C terminus. NKR-P1A, the receptor encoded by the KLRB1 gene, recognizes Lectin Like Transcript-1 (LLT1) as a functional ligand.

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Product Images For NK1.1 Monoclonal Antibody (PK136), PE, eBioscience™

CD49b eFluor 450 CD49b eFluor 450

NK1.1 Antibody (12-5941-82) in Flow

Staining of C57Bl/6 splenocytes with Anti-Mouse CD49b (Integrin alpha 2) eFluor® 450 (Product # 48-5971-82) and 0.125 µg of Mouse IgG2a K Isotype Control PE (Product # 12-4724-81) (left) or 0.125 µg of Anti-Mouse NK1-1 PE (right). Cells in the lymphocyte gate were used for analysis.

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100 Flow Cytometry Re	eferences
Species / Dilution	Summary
Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to investigate how liopoteichoic acid contributes to the innate antiviral immune response in lactobilli.
	Frontiers in immunology (2021; 11:) "Lipoteichoic Acid Is Involved in the Ability of the Immunobiotic Strain <i>Lactobacillus plantarum</i> to Modulate the Intestinal Antiviral Innate Immunity Triggered by TLR3 Activation." Author(s):Mizuno H,Arce L,Tomotsune K,Albarracin L,Funabashi R,Vera D,Islam MA,Vizoso-Pinto MG,Takahashi H, Sasaki Y,Kitazawa H,Villena J PubMed Article URL:http://dx.doi.org/10.3389/fimmu.2020.00571
	12-5941 was used in Flow cytometry/Cell sorting to examine the manner of activation of, and the acquisition of specific memory by, natural killer cells following Bacillus Calmette-Guérin vaccination.
Mouse / Not Cited	PloS one (2016; 11:) "Murine Splenic Natural Killer Cells Do Not Develop Immunological Memory after Re-Encounter with Mycobacterium bovis BCG." Author(s):Kawahara M,Hasegawa N,Takaku H PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0152051
	12-5941 was used in Flow cytometry/Cell sorting to evaluate whether the biological activity of G-CSF can be improved by pre-association with anti-G-CSF monoclonal antibodies prior to injection.
Mouse / Not Cited	Journal of hematology & oncology (2013; 6:) "G-CSF/anti-G-CSF antibody complexes drive the potent recovery and expansion of CD11b+Gr-1+ myeloid cells without compromising CD8+ T cell immune responses." Author(s):Rubinstein MP,Salem ML,Doedens AL,Moore CJ,Chiuzan C,Rivell GL,Cole DJ,Goldrath AW PubMed Article URL:http://dx.doi.org/10.1186/1756-8722-6-75
Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to investigate whether the anti-inflammatory effects of CD4(+)CD25(+) FoxP3(+) Tregs protect against renal IRI.
	Journal of the American Society of Nephrology: JASN (2009; 20: 1744) "Regulatory T cells suppress innate immunity in kidney ischemia-reperfusion injury." Author(s):Kinsey GR,Sharma R,Huang L,Li L,Vergis AL,Ye H,Ju ST,Okusa MD PubMed Article URL:http://dx.doi.org/10.1681/ASN.2008111160
	12-5941 was used in Flow cytometry/Cell sorting to implicate infiltrating macrophages as an important source of interleukin-6 that contributes to the development of acute seizures.
Mouse / Not Cited	Journal of virology (2013; 87: 1849) "Infiltrating macrophages are key to the development of seizures following virus infection." Author(s):Cusick MF,Libbey JE,Patel DC,Doty DJ,Fujinami RS PubMed Article URL:http://dx.doi.org/10.1128/JVI.02747-12
	12-5941 was used in Flow cytometry/Cell sorting to define a critical role for the FL/IFN-I/Flt3 axis in plasmacytoid dendritic cell differentiation from common lymphoid progenitors.
Mouse / Not Cited	The Journal of experimental medicine (2013; 210: 2515) "A type I IFN-Flt3 ligand axis augments plasmacytoid dendritic cell development from common lymphoid progenitors." Author(s):Chen YL,Chen TT,Pai LM,Wesoly J,Bluyssen HA,Lee CK PubMed Article URL:http://dx.doi.org/10.1084/jem.20130536
Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to investigate TCR -dependent and -independent activation of NKT cells in the liver.
	Journal of immunology (Baltimore, Md. : 1950) (2011; 186: 838) "TCR-dependent and -independent activation underlie liver-specific regulation of NKT cells." Author(s):Subleski JJ,Hall VL,Wolfe TB,Scarzello AJ,Weiss JM,Chan T,Hodge DL,Back TC,Ortaldo JR,Wiltrout RH PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1001735
	12-5941 was used in Flow cytometry/Cell sorting to study the role of SOCS3 in suppressing IL-6 signalling during immune responses to T. gondii infection.
Mouse / Not Cited	Cell host & microbe (2011; 10: 224) "A critical role for SOCS3 in innate resistance to Toxoplasma gondii." Author(s):Whitmarsh RJ,Gray CM,Gregg B,Christian DA,May MJ,Murray PJ,Hunter CA PubMed Article URL:http://dx.doi.org/10.1016/j.chom.2011.07.009

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	12-5941 was used in Flow cytometry/Cell sorting to reveal a tumor-inhibiting role for LYG1 through promoting the activation, proliferation, and function of CD4+T cells in antitumor immune responses, offering implications for novel tumor immunotherapy.
Mouse / Not Cited	Oncoimmunology (2021; 6:) "LYG1 exerts antitumor function through promoting the activation, proliferation, and function of CD4 ^{+ /sup> T cells." Author(s):Liu H,Zhang Y,Liu Z,Wang P,Mo X,Fu W,Liu W,Cheng Y,Han W PubMed Article URL:http://dx.doi.org/10.1080/2162402X.2017.1292195}
	12-5941 was used in Flow cytometry/Cell sorting to assess for alterations in MPs.
Mouse / Not Cited	PloS one (2017; 12:) "Mononuclear Phagocytes Are Dispensable for Cardiac Remodeling in Established Pressure-Overload Heart Failure." Author(s):Patel B,Ismahil MA,Hamid T,Bansal SS,Prabhu SD PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0170781
	12-5941 was used in Flow cytometry/Cell sorting to determine the role of intracellular HMGB1 in hepatocytes after liver ischaemia-reperfusion.
Mouse / Not Cited	Hepatology (Baltimore, Md.) (2014; 59: 1984) "Hepatocyte-specific high-mobility group box 1 deletion worsens the injury in liver ischemia/reperfusion: a role for intracellular high-mobility group box 1 in cellular protection." Author(s):Huang H,Nace GW,McDonald KA,Tai S,Klune JR,Rosborough BR,Ding Q,Loughran P,Zhu X,Beer-Stolz D, Chang EB,Billiar T,Tsung A PubMed Article URL:http://dx.doi.org/10.1002/hep.26976
Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to demonstrate how the parenchymal factor RAGE mediates lung-specific accumulation of ILC2s that drive allergic airway inflammation in mice.
	The Journal of allergy and clinical immunology (2015; 136: 747) "Pulmonary receptor for advanced glycation end-products promotes asthma pathogenesis through IL-33 and accumulation of group 2 innate lymphoid cells." Author(s):Oczypok EA,Milutinovic PS,Alcorn JF,Khare A,Crum LT,Manni ML,Epperly MW,Pawluk AM,Ray A,Oury TD PubMed Article URL:http://dx.doi.org/10.1016/j.jaci.2015.03.011
	12-5941 was used in Flow cytometry/Cell sorting to investigate the effects on measles infection after replacement of the V domain of mouse SLAM with human SLAM.
Mouse / Not Cited	Journal of virology (2007; 81: 1650) "Measles virus infection of SLAM (CD150) knockin mice reproduces tropism and immunosuppression in human infection." Author(s):Ohno S,Ono N,Seki F,Takeda M,Kura S,Tsuzuki T,Yanagi Y PubMed Article URL:http://dx.doi.org/10.1128/JVI.02134-06
	12-5941 was used in Flow cytometry/Cell sorting to examine the importance of interferon-gamma in antibody-mediated protection against chlamydia infection.
Mouse / Not Cited	Infection and immunity (2016; 84: 3232) "IFN is Required for Optimal Antibody-Mediated Immunity against Genital Chlamydia Infection." Author(s):Naglak EK,Morrison SG,Morrison RP PubMed Article URL:http://dx.doi.org/10.1128/IAI.00749-16
	12-5941 was used in Flow cytometry/Cell sorting to uncover a platelet-directed, spatiotemporally organised, multicellular crosstalk that is essential for effective trafficking of leukocytes to the site of inflammation.
Mouse / Not Cited	PLoS biology (2016; 14:) "Platelets Guide Leukocytes to Their Sites of Extravasation." Author(s):Zuchtriegel G,Uhl B,Puhr-Westerheide D,Pörnbacher M,Lauber K,Krombach F,Reichel CA PubMed Article URL:http://dx.doi.org/10.1371/journal.pbio.1002459
Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to investigate the role of 2-microglobulin in regulating gamma-delta T lymphocyte homeostasis.
	Journal of immunology (Baltimore, Md. : 1950) (2009; 182: 1892) "Gammadelta T lymphocyte homeostasis is negatively regulated by beta2-microglobulin." Author(s):French JD,Roark CL,Born WK,O'Brien RL PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.0803165

	12-5941-82 was used in Flow Cytometry to provide protocols and guidelines in using three mouse restraint models, namely prolonged restraint stress, repeated restraint stress, and chronic variable stress, to examine immunological homeostasis/competence, or lack thereof, under stress with or without habituation.
Mouse / Not Cited	STAR protocols (2021; 2:) "Physical restraint mouse models to assess immune responses under stress with or without habituation." Author(s):Ding JX,Rudak PT,Inoue W,Haeryfar SMM PubMed Article URL:http://dx.doi.org/10.1016/j.xpro.2021.100838
	12-5941-82 was used in Flow Cytometry to provide insights into the functional role of bone marrow-derived sesenchymal stem cell in alleviating liver fibrosis.
Mouse / Not Cited	Cell death discovery (2021; 7:) "Mesenchymal stem cells attenuate liver fibrosis by targeting Ly6C ^{hi/lo} macrophages through activating the cytokine-paracrine and apoptotic pathways." Author(s):Li YH,Shen S,Shao T,Jin MT,Fan DD,Lin AF,Xiang LX,Shao JZ PubMed Article URL:http://dx.doi.org/10.1038/s41420-021-00584-z
	12-5941 was used in Flow cytometry/Cell sorting to investigate the role of mTOR signalling in the activation of TH2, ILC and IL-33 inflammation responses.
Mouse / Not Cited	The Journal of allergy and clinical immunology (2012; 130: 1159) "IL-33 induces innate lymphoid cell-mediated airway inflammation by activating mammalian target of rapamycin." Author(s):Salmond RJ,Mirchandani AS,Besnard AG,Bain CC,Thomson NC,Liew FY PubMed Article URL:http://dx.doi.org/10.1016/j.jaci.2012.05.018
	12-5941 was used in Flow cytometry/Cell sorting to determine the function of interleukin 37.
Mouse / Not Cited	Nature immunology (2010; 11: 1014) "IL-37 is a fundamental inhibitor of innate immunity." Author(s):Nold MF,Nold-Petry CA,Zepp JA,Palmer BE,Bufler P,Dinarello CA PubMed Article URL:http://dx.doi.org/10.1038/ni.1944
	12-5941 was used in Flow cytometry/Cell sorting to show transcriptional sexual dimorphism in macrophages.
Mouse / Not Cited	Nature communications (2019; 10:) "ImmGen report: sexual dimorphism in the immune system transcriptome." Author(s):Gal-Oz ST,Maier B,Yoshida H,Seddu K,Elbaz N,Czysz C,Zuk O,Stranger BE,Ner-Gaon H,Shay T PubMed Article URL:http://dx.doi.org/10.1038/s41467-019-12348-6
	12-5941 was used in Flow cytometry/Cell sorting to study IL-7 and IL-15 regulation of CD8+ T-cell subsets during contraction of the immune response.
Mouse / Not Cited	Blood (2008; 112: 3704) "IL-7 and IL-15 differentially regulate CD8+ T-cell subsets during contraction of the immune response." Author(s):Rubinstein MP,Lind NA,Purton JF,Filippou P,Best JA,McGhee PA,Surh CD,Goldrath AW PubMed Article URL:http://dx.doi.org/10.1182/blood-2008-06-160945
	12-5941-82 was used in Flow cytometry/Cell sorting to determine a protocol for mouse skin isolation and immune cell isolation.
Mouse / Not Cited	STAR protocols (2021; 2:) "Optimized protocol for immunophenotyping of melanoma and tumor-bearing skin from mouse." Author(s):Krisna SS,Goncalves C,Gagnon N,Huang F,Plourde D,Miller WH,Fritz JH,Del Rincon SV PubMed Article URL:http://dx.doi.org/10.1016/j.xpro.2021.100627
	12-5941 was used in Flow cytometry/Cell sorting to study whether MP CD4+ T cells are functionally heterogeneous and, if so, what signals specify the differentiation of MP cell subpopulations under homeostatic conditions.
Mouse / 1:100	Nature communications (2020; 11:) "Requirements for the differentiation of innate T-bet ^{high} memory-phenotype CD4 ⁺ T lymphocytes under steady state." Author(s):Kawabe T,Yi J,Kawajiri A,Hilligan K,Fang D,Ishii N,Yamane H,Zhu J,Jankovic D,Kim KS,Trinchieri G,Sher A PubMed Article URL: http://dx.doi.org/10.1038/s41467-020-17136-1
	12-5941 was used in Flow cytometry/Cell sorting to find markers associated with non-conventional T cell subsets, including T cells and invariant natural killer T cells.
Mouse / Not Cited	PloS one (2017; 11:) "Expression of CD11c Is Associated with Unconventional Activated T Cell Subsets with High Migratory Potential."
	Author(s):Qualai J,Li LX,Cantero J,Tarrats A,Fernández MA,Sumoy L,Rodolosse A,McSorley SJ,Genescà M PubMed Article URL:http://dx.doi.org/10.1371/journal.pone.0154253
Mouse / Not Cited Mouse / 1:100	"IL-7 and IL-15 differentially regulate CD8+ T-cell subsets during contraction of the immune response." Author(s):Rubinstein MP,Lind NA,Purton JF,Filippou P,Best JA,McGhee PA,Surh CD,Goldrath AW PubMed Article URL:http://dx.doi.org/10.1182/blood-2008-06-160945 12-5941-82 was used in Flow cytometry/Cell sorting to determine a protocol for mouse skin isolation and immune or isolation. STAR protocols (2021; 2:) "Optimized protocol for immunophenotyping of melanoma and tumor-bearing skin from mouse." Author(s):Krisna SS,Goncalves C,Gagnon N,Huang F,Plourde D,Miller WH,Fritz JH,Del Rincon SV PubMed Article URL:http://dx.doi.org/10.1016/j.xpro.2021.100627 12-5941 was used in Flow cytometry/Cell sorting to study whether MP CD4+ T cells are functionally heterogeneous so, what signals specify the differentiation of MP cell subpopulations under homeostatic conditions. Nature communications (2020; 11:) "Requirements for the differentiation of innate T-bet ^{high Nature communications (2020; 11:) "Requirements for the differentiation of innate T-bet^{high Author(s):Kawabe T,Yi J,Kawajiri A,Hilligan K,Fang D,Ishii N,Yamane H,Zhu J,Jankovic D,Kim KS,Trinchieri G,Shel PubMed Article URL:http://dx.doi.org/10.1038/s41467-020-17136-1 12-5941 was used in Flow cytometry/Cell sorting to find markers associated with non-conventional T cell subsets, including T cells and invariant natural killer T cells. PloS one (2017; 11:) "Expression of CD11c Is Associated with Unconventional Activated T Cell Subsets with High Migratory Poter Author(s):Qualai J,Li LX,Cantero J,Tarrats A,Fernández MA,Sumoy L,Rodolosse A,McSorley SJ,Genescà M}}

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	12-5941 was used in Flow cytometry/Cell sorting to study how allergic patterns of lung inflammation are mediated as a host response to Cryptococcus neoformans infection.
Mouse / Not Cited	Journal of immunology (Baltimore, Md. : 1950) (2013; 191: 2503) "IL-33 signaling regulates innate and adaptive immunity to Cryptococcus neoformans." Author(s):Flaczyk A,Duerr CU,Shourian M,Lafferty EI,Fritz JH,Qureshi ST PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1300426
Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to provide evidence that functional DCs are required for optimal IFN-gamma expression and cytolytic function by NK cells following HSV-1 infection.
	Journal of virology (2009; 83: 3175) "Dendritic cells are required for optimal activation of natural killer functions following primary infection with herpes simplex virus type 1." Author(s):Kassim SH,Rajasagi NK,Ritz BW,Pruett SB,Gardner EM,Chervenak R,Jennings SR PubMed Article URL:http://dx.doi.org/10.1128/JVI.01907-08
	12-5941 was used in Flow cytometry/Cell sorting to determine why interleukin-15 knockout mice exhibit reduced mortality after infection with influenza virus A.
Mouse / Not Cited	Journal of virology (2010; 84: 5574) "Interleukin-15 is critical in the pathogenesis of influenza a virus-induced acute lung injury." Author(s):Nakamura R,Maeda N,Shibata K,Yamada H,Kase T,Yoshikai Y PubMed Article URL:http://dx.doi.org/10.1128/JVI.02030-09
	12-5941 was used in Flow cytometry/Cell sorting to study the role fof LXR in the pathogenesis of steatohepatitis.
Mouse / 1:30	Endocrinology (2018; 159: 1419) "Dysregulation of Kupffer Cells/Macrophages and Natural Killer T Cells in Steatohepatitis in LXR Knockout Male Mice." Author(s):Endo-Umeda K,Nakashima H,Umeda N,Seki S,Makishima M PubMed Article URL:http://dx.doi.org/10.1210/en.2017-03141
	12-5941 was used in Flow cytometry/Cell sorting to show that protectin D1 reduces concanavalin A-induced liver injury.
Mouse / 1:1000	Molecular medicine reports (2016; 13: 3627) "Protectin D1 reduces concanavalin A-induced liver injury by inhibiting NF-B-mediated CX3CL1/CX3CR1 axis and NLR family, pyrin domain containing 3 inflammasome activation." Author(s):Ren J,Meng S,Yan B,Yu J,Liu J PubMed Article URL:http://dx.doi.org/10.3892/mmr.2016.4980
	12-5941 was used in Flow cytometry/Cell sorting to describe the phenotype of Pten-deficient Valpha14iNKT cells.
Mouse / Not Cited	Blood (2007; 109: 3316) "The Pten/PI3K pathway governs the homeostasis of Valpha14iNKT cells." Author(s):Kishimoto H,Ohteki T,Yajima N,Kawahara K,Natsui M,Kawarasaki S,Hamada K,Horie Y,Kubo Y,Arase S, Taniguchi M,Vanhaesebroeck B,Mak TW,Nakano T,Koyasu S,Sasaki T,Suzuki A PubMed Article URL:http://dx.doi.org/10.1182/blood-2006-07-038059
	12-5941 was used in Flow cytometry/Cell sorting to reveal that the deubiquitinase OTU domain, ubiquitin aldehyde binding 1 (OTUB1) is upregulated in DCs upon murine Toxoplasma gondii infection and lipopolysaccharide challenge.
Mouse / Not Cited	Cellular & molecular immunology (2021; 18: 1512) "The deubiquitinase OTUB1 augments NF-B-dependent immune responses in dendritic cells in infection and inflammation by stabilizing UBC13." Author(s):Mulas F,Wang X,Song S,Nishanth G,Yi W,Brunn A,Larsen PK,Isermann B,Kalinke U,Barragan A,Naumann M, Deckert M,Schlüter D PubMed Article URL:http://dx.doi.org/10.1038/s41423-020-0362-6
	12-5941 was used in Flow cytometry/Cell sorting to characterise the factors contributing to neoalveolarization within 21 days of pneumonectomy.
Mouse / Not Cited	Stem cell research (2013; 10: 267) "Migration of CD11b+ accessory cells during murine lung regeneration." Author(s):Chamoto K,Gibney BC,Lee GS,Ackermann M,Konerding MA,Tsuda A,Mentzer SJ PubMed Article URL:http://dx.doi.org/10.1016/j.scr.2012.12.006
Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to demonstrate that granzymes should be considered as potential key regulators of inflammation.
	Journal of immunology (Baltimore, Md. : 1950) (2010; 185: 1794) "A role for granzyme M in TLR4-driven inflammation and endotoxicosis." Author(s):Anthony DA,Andrews DM,Chow M,Watt SV,House C,Akira S,Bird PI,Trapani JA,Smyth MJ PubMed Article URL:http://dx.doi.org/10.4049/jimmunol.1000430

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Mouse / Not Cited	12-5941 was used in Flow cytometry/Cell sorting to investigate the cellular processes that drive sterile inflammatory injury after hepatic ischaemia/reperfusion injury.
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